B.G. MICRO P.O. Box 280298 Dallas, Texas 75228 (214)271-5546

TECHNICAL DATA: COMPUTALKER SPEECH SYNTHESIZER (CSSB)

Description; The CSSB is an english text to speech synthesizer board, designed to be mounted inside a PC/XT type computer and connected to the computer's RS232 serial port with an external cable. The serial input port of the CSSB is configured as a modem interface to allow easy connection to the computers serial port.

The board is shipped from the factory with the serial port configured as follows:

S1 - Off any Delimiter
S2 - Off external ROM Buffer
S3 - On Serial interface (Jumpered on back of board in etch)
S4 - Off, S5 - On, S6 - Off 2400 baud the character format is fixed at 7 bits, 2 stop bits, No parity

These parameters will work with the default com port parameters on the PC/XT.

The RS232 Connector pin configuration is:

Pin#	Description
1	Ground
2	Serial data input to the CSSB.
3	Not used.
4	Request to send (RTS) CSSB reset control. -9 Volts (off) holds the CSSB in reset. No speech. +9 Volts (on) Reset off. The CSSB can speak. Can be defeated by cutting jumper "JA".
5	CTS 4.7K Pull Up for PC Compatibility.
6	Data Set Ready (DSR) Buffer Full Hand Shake. -9 Volts (off) is buffer full no characters accepted. +9 Volts (On) Buffer is ready to accept characters. Can be defeated by cutting jumper "JB".
7	Ground return.
8	Carrier detect (DCD) 4.7K Pull Up for PC Compatibility.

*********WARNING********WARNING********WARNING********WARNING********

The DB25S interface connector on the COMPUTALKER is the same type of connector as is used on the parallel printer port on IBM PC's and PC Clones. Damage to the parallel interface on your printer could occur if it should accidently be connected to the COMPUTALKER interface Connector.

********WARNING********WARNING********WARNING********WARNING********

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The Six Position Selector Switch Functions:

SW #	COND	DESCRIPTION
1	ON	CSSB must receive a new line command (Hex OD) to begin
	* Off	CSSB will begin speaking on any non alpha numeric character.
2	ON	CSSB uses internal Ram buffer which is about 20 characters long. This position is not useable at data rates above 110 baud.
	* OFF	CSSB will use the external 1700 Character buffer.
3	* ON	Selects serial interface (Jumpered on back of board).
	OFF	Selects Parallel interface. Not available.
4,5,6		Data Rate Selection

SW4	SW5	SW6	Baud Rate	
ON	ON	ON	Invalid	
OFF	ON	ON	50	
ON	OFF	ON	110	
OFF	OFF	ON	300	
ON	ON	OFF	1200	
*OFF	ON	OFF	2400	Default PC/XT Data Rate
ON	OFF	OFF	4800	
OFF	OFF	OFF	9600	

*Denotes Factory Setting

Notes On Operating The CSSB:

1. When the power is applied and the RTS input to the CSSB is set high, the CSSB will respond with "OK".To suppress this after initial turn on, disconnect the RTS Line Pin 4 in the RS232 input cable or cut jumper "JA" The CSSB will still speak "OK" when power is first applied, but will not say OK when the Com Port is opened. Thereafter, you will not be able to turn the speech off when the Com Port is closed with RTS Disconnected.

2. If you plan to use the CSSB with programs written in PC/XT Basic supplied with the disk operating system, write the program in such a way that the buffer is never filled. Should the buffer be filled, internal timers in basic will time out and halt. The program indicating "Device Timeout in [Line#]"
The buffer will hold 1792 Bytes.

3. You can stop the speech immediately two ways:

   A. Turn off RTS Pin 4 to the CSSB RS232 Port. (-3 Volts or less)
   B. If the buffer is not full, send escape (CHR$ (27)

   With either method, the buffer will be erased.

4. There is a 4 pin male connector just above the speaker. The two outer pins are in parallel with the CSSB Speaker. An external speaker can be connected here, or at the RCA Phono Jack on the top of the Connector panel, on the back of the CSSB.

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5. A standard DB25M to DB25S RS232 cable can be used to connect the CSSB to the computer RS232 Port. Pins 1 through 8 are used. There is no connection to any others. The cable whould be wired in a 1 to 1 configuration. No cross connections are required; provided the computer RS232 port is a standard terminal output configuration (PC/XT Factory configuration).

6. Although the board is laid out to fit inside a PC/XT type computer, it can be used with any computer having an RS232 port available. Only power is taken from the PC/XT I/O Buss. It will be necessary to supply power to the board through the edge connector.

7. You can make the COMPUTALKER spell out instead of pronounce words by putting a (space) between each character in the word.

8. The CSSB will only speak numbers 0,1,2,3,4,5,6,7,8,9 individually. If you want the CSSB to speak "104" as "One hundred and Four" instead of "One Zero Four"
You will have to write a program to implement the operation.

9. The CSSB has a heavy accent. Putting spaces between words slows the speech down. Spelling words "phonetically" instead of "correctly" will improve the speech quality considerably.

10. All power connections are made to the circuit side of the edge connector. Pin B01 is the end of the connector nearest the RS232 Connector. The Connections are:

PIN #	FUNCTION	
B01	Ground	Nearest the RS232 Connector
B10	Ground	
B31	Ground	Furtherest away from the RS232 Connector
B03	+5 Volts	
B29	+5 Volts	
B07	-12 Volts	
B09	+12 Volts	

A special edge connector and power supply will be available from B.G. MICRO, as an optional extra by about Jan 87. Contact BG MICRO for details.

11. There is an Autoexec. Bat file on the distribution diskette that will greet you with a message when your system is turned on. The message is contained in message TXT. To use the automatic greeting, the Boot Disk (Drive A or the Hard Disk) Root Directory must have the following files present:

Autoexec. Bat	From CSSB Distribution Diskette, or add the following line to the existing Autoexec. Bat File. Copy Message.TXT COM 1
Message. TXT	Containing your own message or the one from the CSSB disk. The message. TXT file must have 10 leading spaces to allow the Computalker to initialize the first time after power up.

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Running the Wordlist speech development program supplied with the CSSB.

Wordlist is supplied in two forms:

1. Wordlist. EXE a Compiled basic version of the program. This program is supplied to allow anyone to operate the CSSB that has a PC/XT type system without having to depend on having PC/XT basic available.

2. Wordlist. BAS is the basic source file for the program. Any user with basic can modify the program or use the program as an example of how to interface their programs to the CSSB.

Wordlist allows the user to develop words and phrases and store them for future reference. It is heavily menu driven. Its use should be easily understood by following the menu.

Install the CSSB in an available slot in your PC. Connect an RS232 cable (Described elsewhere) between your com port and the CSSB.

To run the "Wordlist" program:

1. Boot your system on MSDOS Version 2.1 or Later.
2. When you get the "A" prompt, remove the system disk and insert the disk supplied with the CSSB in Drive A.
3. From the "A" Prompt enter: Wordlist (enter)
   (enter) means depress the "enter" Key.

The program will begin execution and further instructions will be given on the screen.

The first question the program will ask you is to specify the Com Port to be used with the CSSB. If you do not know, try "1" first. If that doesn't work try "2". No damage will occur if you are wrong the first time.

B.G. MICRO Cannot answer questions about modifying the Wordlist program or help with any problems you may have in making programs you write work, unless the question involves the operation of the board itself. In other words, B.G. MICRO cannot debug your programs for you.

B.G. MICRO can develop special application programs for users on special order. Contact B.G. MICRO for details and a cost estimate. Allow 2 weeks for response.

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COMPUTALKER User's group and public library.

Public domain software for the COMPUTALKER

B.G. MICRO is setting up a public domain clearing house and users group for exchanging libraries, programs and tested applications for the COMPUTALKER.

Persons submitting applications libraries, or programs should make their submissions on a standard 5¼ inch DSDD IMB PC Compatible floppy disk compatible with MSDOS Version 2.1 or later.

Please include any special instructions for using your program or library in a text file on the disk with your submission. Please include your name and address in the text file and in comment statements in any programs you submit. This will be used to give you credit for the work you submit. Assembly language programs must include the source code in order to be accepted.

If you do not have a word processing program to prepare a text file, you may obtain a copy of "PC Write" from B.G. MICRO for $5.00 to cover the cost of duplication packaging and shipping. "PC Write" is a very flexible, general purpose word processing program that is very easy to use. A 138 Page manual is included on the diskette with the "PC Write" Program.

All submissions will be considered to be public property. No royalties will be paid nor will you be paid for any programs or libraries that are accepted for inclusion in the computalker public library.

All persons making submissions will be given credit for their submission unless they specifically request that their name be withheld.

All persons making submissions that are accepted for the COMPUTALKER public library will be given a copy of the latest diskette containing the programs and libraries submitted by other users. Please allow 60 days for evaluation and return.

By March 1987 B.G. MICRO will publish a list of programs and libraries in the COMPUTALKER public library Copies of the COMPUTALKER Library disks will be available for $5.00 to cover duplication, packaging and shipping.

All Programs and information in the library will be checked out by B.G. MICRO programmers and evaluators, before being included in the library, B.G. MICRO will not be responsible or held liable for any damages real or otherwise that may result from the use of programs and data in the library. The library Data is made available so that users may share programs and information concerning the COMPUTALKER.